[0241] **FIGS. 5A through 5E** are schematic views showing a sequence of character inputs as an illustrative example of entering a word on the preferred embodiment of a portable computer **102** incorporating a reduced auto-correcting keyboard system **100** formed in accordance with the invention as shown in **FIGS. 1A, 1B, 2, 6** and **7**. Portable computer **102** contains a reduced keyboard **105** implemented on a touch screen display **103**, or virtual keyboard (see **FIG. 6** and **7**), which is used to generate text to be output to text display region **104**.

[0242] **FIG. 5A** shows the location **510** of the first keystroke of a sequence of keystrokes corresponding to the entry of the word "text." In response to the keystroke **501**, the auto-correcting keyboard system displays the word choice list region **150** super-imposed on top of the text region **104**, showing a list of words and other interpretations corresponding to the keystroke. In this example, the coordinate location **510** of the keystroke is physically nearest coordinate location associated with the letter "r." The word choice list includes "R"**511** as the default choice, shown in the word choice list in the position nearest the auto-correcting region **106**. Because the letter "r", when it occurs as a "word" that is only one letter in length, is found more frequently in upper case, such as when "R" appears as an initial included as part of a person's name, "R" is offered in the word choice list in upper case. This is in accordance with the aspect of the invention wherein information regarding the capitalization of each word is stored along with the word in the vocabulary modules so that the word can be presented in a preferred form of capitalization without requiring the user to activate keys, such as a Shift key, to specify the capitalization of the word entered. The word choice list shows "are"**512** as the next most likely choice, in accordance with the aspect of the invention wherein a word or symbol may be associated with an arbitrary sequence of one or more letters, such that when the associated sequence of letters is entered by the user, the word or symbol is offered as a choice in the word choice list. In this example, the word 'are' is associated as a "macro" expansion of the single letter "r" which is pronounced the same in English. Similarly, the word choice list shows "®"**513** as the third most likely choice where this symbol has been included in the vocabulary modules based on the logical association with the letter "r." The word choice list shows "a"**514** as the fourth most likely choice, where "a" is a very commonly occurring word of one letter, so that it appears as a candidate in the word choice list even though the coordinate location associated with the letter "a" is relatively distant from interaction location **501**. Above these choices is the exact type region displaying "r"**515** as an option for selection, since the coordinate location associated with the letter "r" is closer than that of any other letter to coordinate location **510** of the keystroke.

[0243] **FIG. 5B** shows the location **520** of the next keystroke, nearest to the coordinate location associated with the letter "w." The word choice list includes "re"**521** as the default choice, "Re"**522** as the next most likely choice, "ra"**523** as the third most likely choice and "Rs"**524** as the fourth most likely choice. Above these choices is the exact type region displaying "rw"**55** as an option for selection.

[0244] **FIG. 5C** shows the location **530** of the next keystroke, nearest to the coordinate location associated with the letter "z." The word choice list includes "tax"**531** as the default choice. "Rex"**532** as the next most likely choice, "fax"**533** as the third most likely choice and "was"**534** as the fourth most likely choice. Above these choices is the exact type region displaying "rwz"**535** as an option for selection.

[0245] **FIG. 5D** shows the location **540** of the next keystroke, very near the coordinate location associated with the letter "t." The word choice list includes "text"**541** as the default choice, "year"**542** as the next most likely choice, "rest"**543** as the third most likely choice and "fact"**544** as the fourth most likely choice. Above these choices is the exact type region displaying "rwzt"**545** as an option for selection. The word "text" is to be entered as the next word.

[0246] **FIG. 5E** shows the next keystroke at **550**, in the region designated as the "space" key. The space key is outside of the auto-correcting region **106**, and thus can be unambiguously associated with a specific function. The space key acts to accept the default word "text"**541** and enters the word "text"**542** in the text output region **104** at the insertion point **107** in the text being generated where the cursor was last positioned. Simultaneously, the current input sequence is cleared, and the word choice list display is removed from the display screen **103** of the portable computer **102** so that the text output region **104** is unobscured.

[0247] **FIG. 5F** is the same schematic view as that of **FIG. 5A** showing a non-screen embodiment of the invention, where the keyboard is projected onto a surface **580**.

[0248] Various input devices have been introduced that provide new opportunities for user interaction with computers, PDAs, video games, cell phones, and the like. As discussed above, such devices suffer from accuracy and registration problems, thereby rendering them generally unsuitable for the data entry input function for which they are intended. The invention herein, as discussed above, provides a solution to the problem of obtaining useful data input with such devices.

[0249] **FIG. 6** is a schematic view showing a laser-projection keyboard for use in connection with the invention herein disclosed. For example, the laser-projection keyboard offered by companies such as VKB (see http://www.vkb.co.il/) and Canesta (see http://www.canesta.com/) is a projection keyboard that is capable of being fully integrated into smart phones, cell phones, PDAs, or other mobile or wireless devices. The laser-projection keyboard uses a tiny laser pattern projector **62** to project the image of a full-sized keyboard **63** onto a convenient flat surface **64**, such as a tabletop or the side of a briefcase, between the device **60** and the user **61**. The user can then type on this image and the associated electronic perception technology instantly resolves the user's finger movements into ordinary serial keystroke data that are easily used by the wireless or mobile device. The advantages offered by the laser-projection keyboard are best appreciated when considering current input solutions such as thumb keyboards or handwriting recognition which, though popular, are limited in their ability to support typing-intensive applications, such as document and memo creation, as well as email composition. A laser-projection keyboard allows a mobile or wireless device to support applications that previously would have only been practical with a full-sized, mechanical keyboard.

[0250] Yet another embodiment is an in-flight system comprising a virtual keyboard on the tray table and a